

Eklavya University, Damoh (MP)

B.P.T. IIIrd Year

Syllabus 2022-23

School of Nursing & Paramedical Science



School of Nursing and Paramedical
Sciences

SCHEME OF EXAMINATION: BACHELOR OF PHYSIOTHERAPY (B. P. Th.)

Third Year B. P. Th. Examination

S.No	Subject code	Subject	Internal		University Examination			Total
			Theory	Practical	Theory	External Viva	External Practical	
1	BPHSI20Y301	Neurology including Psychiatry & Neurosurgery	20	-	80	-	-	100
2	BPHSI20Y302	Orthopaedics	20	-	80	-	-	100
3	BPHSI20Y303	Applied Biomechanics & Kinesiology	20	-	80	-	-	100
4	BPHSI20Y304	Physiotherapeutic in Neurology & Neurosurgery	20	20	100	20	40	200
5	BPHSI20Y305	Physiotherapeutic in Orthopaedic Conditions	20	20	100	20	40	200
6	BPHSI20Y306	Physical Evaluation, Diagnosis & Prescription	20	20	100	20	40	200
Total Marks,								900

N.B.- Viva marks will be added in theory marks along with internal assessment theory; candidate have to get min. 50% marks in theory and viva collectively for passing the examination.



School of Nursing and Paramedical
Sciences

Department of Paramedical

SYLLABUS

Bachelor of Physiotherapy (BPT)
4½ YEAR DEGREE COURSE

Year	BPT 3rd Year
Subject	Neurology including Psychiatry & Neurosurgery
Time	100 hrs Theory

Course code	Neurology including Psychiatry & Neurosurgery	
BPHSI20Y301		
Pre-requisite	Nil	Syllabus version
Course Objectives:		
<ol style="list-style-type: none"> 1. To prompt introspection and motivate students towards self-appraisal, goal-setting and problem solving. 2. Familiarize students with negotiation techniques and importance of right attitude for better coordination and team building. 3. Guide students to better drafting in creative and critical compositions. 4. Help students review policies of global importance affecting corporate teractions. 		
Course Outcome:		
<p>Students will be able to connect science and technology with society.</p> <ol style="list-style-type: none"> 1. Examine and analyze the complex nature and seriousness of the patient's condition or extent of injuries to assess the need for advanced emergency medical care, and perform complex medical care based on assessment findings of the patient's condition and/or situation. 2. Demonstrate an increased depth and breadth of patient care in the prehospital setting by applying principles from evidence-based research in emergency medicine. 		
Student Learning Outcomes (SLO):		
<ol style="list-style-type: none"> 1. Students will be able to demonstrate their ability to perform an appropriate primary/initial assessment of the ill or injured patient in the prehospital setting. 2. Students will be able to demonstrate their ability to perform an appropriate secondary/focused history and physical exam of the trauma patient in the pre-hospital setting. 3. Students will be able to perform an appropriate secondary/focused history and physical exam for patients with medical complaints or signs and symptoms in the pre-hospital setting. 		





Unit - 1

20

NEUROLOGY: Nervous system: Disorders of Neurological functions in the light of Anatomy and Physiology (Brief description only) – A. Basic Neurophysiology, functional anatomy, tracts, pyramidal and extra pyramidal/cerebellar systems of brain and spinal cord/nerves, Major Nerve Tracts, Motor System, Sensory System, Autonomic System, Communication & CSF. Reflexes:- Physiology of reflexes, genesis of spasticity, rigidity, postural reflex Bladder and Bowel Control:- Innervations, anatomy, physiology, pathology. Clinical assessment of a neurological patient: Principles of clinical examination and diagnosis, higher mental function, assessment of brain and spinal cord function, Differential diagnosis and Prognosis of Neurological disorders, history taking/over view from perspective of clinical examination. stigation Principles, methods, views, type of following investigative procedure- Skull X-ray, CT, MRI, Evoked potential, lumber puncture, CSF examination, EMG, NCV. General manifestations of nervous system disease & management

PSYCHIATRY: Principles of psychiatric examination, Modalities of psychiatric treatment.

NEUROSURGERY: Neurophysiology: Reviews in brief the neurophysiologic basis of tone and Disorders of tone and Posture, Bladder control, Muscle conduction, Movement and Pain. Clinical Features and Management: Briefly outline the clinical features and management of the following neurological disorders. Congenital and Childhood disorders Hydrocephalus. pinal Bifida. Trauma - Broadcalization, first aid and management. Head Injury: Etiology, pathophysiology, classification, climinal sign and symptoms, investigations, medical management, Surgical management and complications.

Unit - 2

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NEUROLOGY: Brief Description of Headache, migraine, raised intra-cranial pressure Cranial Nerves and special senses with major emphasis on V, VII, X, XI, & XII nflammatory conditions (brief description) – meningitis (bacterial, tubercular), viral encephalitis, Poliomyelitis, syphilis, rabies, Disorders of cerebral circulation – Stroke: - Etiopathology, clinical features pertaining to

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artery involved, types, management. Hypertensive encephalopathy.

PSYCHIATRY: Psychiatric illness and physical therapy link. Brief description of Etio-pathogenesis, manifestations, and management of psychiatric illnesses - Anxiety neurosis.

NEUROSURGERY: Intra-cranial disorders – clinical features, complications & management of brain abscess, space occupying lesion, hydrocephalus, vascular malformation, Brain tumors and Spinal tumors: classification, clinical sign and symptoms, investigations, differential diagnosis, medical and surgical management. Intracranial tumors: Broad Classification, Signs and Symptoms.

Unit – 3

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NEUROLOGY: Demyelinating diseases (brief description) - acute disseminated encephalomyelitis, multiple sclerosis Movement disorders/ Extra pyramidal syndromes - Parkinson's disease, Chorea, Athetosis, Dystonia, Hemiballismus, Spasmodic Torticollis, Tremors and Writer's Cramps, Cerebellar Ataxia, Friedreich's Ataxia . Convulsive disorders (brief description) - epilepsy (GM, PM, Psychomotor), tetany. Developmental and degenerative syndromes' – cerebral palsy, kernicterus, hereditary ataxias, motor neuron disease, Peroneal muscular atrophy, Disorders of Spinal cord and Cauda Equina- spinal cord injury, paraplegia, quadriplegia, spina-bifida, transverse myelitis, Non-compressive myelopathies, Neurogenic bladder and bowel.

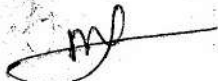
PSYCHIATRY: Child psychiatry: Brief descriptions of manifestations, and management of childhood disorders - attention deficit syndrome, and behavioral disorders.

NEUROSURGERY: Vertebral column injuries – classification, clinical features, complications & management. Spinal Cord injury and Diseases of the Spinal Cord: Craniovertebral junction anomalies. Syringomyelia, Cervical and lumbar disc disease, Tumours, Spinal arachnoiditis.

Peripheral Nerve Disorders: Peripheral nerve injuries: Localization and Management. Entrapment Neuropathies

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Unit - 4	20
<p>NEUROLOGY: Metabolic and intoxication disorders (brief description) - Alcoholism, Drug addiction, heavy metals poisoning (lead, mercury, copper), Organo-phosphorous poisoning, electric shock, tetanus, botulism. Peripheral nerve disorders – traumatic/ compression or entrapment neuropathy, polyneuritis, AIDP, CIDP, GB syndrome, diabetic polyneuropathy and spinal radiculopathies. Special emphasis on brachial and lumbo-sacral plexuses and major nerves – radial, ulnar, median, femoral, and sciatic nerve. Muscle disorders – Dystrophies (classification clinical features. Beckers muscular dystrophy, duchennes muscular dystrophy), Progressive muscular dystrophy, polymyositis, myasthenia gravis, floppy infant syndrome, overview of other muscle disorders like channelopathies, cramps. Autonomic nervous system (brief description)– clinical features of autonomic disorders, autonomic dysreflexia, autonomic nervous system and pain.</p> <p>PSYCHIATRY: Geriatric Psychiatry</p> <p>NEUROSURGERY: Pre-operative assessment, Indications and Contraindications for Neurosurgery. Introduction and brief description of indication and complications of following neurosurgeries: Craniotomies, cranioplasty, stereotactic surgery, deep brain stimulation, burr hole, shunting, laminectomy, hemilamectomy, rhizotomy, microvascular decompression surgery, Endarterectomy, embolization, pituitary surgery, ablative surgery- Thalamotomy and pallidotomy, Neurolo implantation.</p>	
Unit - 5	20
<p>NEUROLOGY: Pediatric neurology: Neural development, etiology, pathophysiology, classification, clinical sign and symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders- Cerebral palsy, hydrocephalus, Arnold Chiari malformation, basilar impression, Klippel-feil syndrome, achondroplasia, cerebral malformations, Autism, Dandy walker syndrome and Down syndrome. Motor Neuron disease: Etiology, pathophysiology, classification, clinical sign and symptoms, investigations, differential diagnosis, medical management and</p>	

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complications of following disorders. Amyotrophic Lateral Sclerosis, Spinal muscular atrophy, Bulbar palsy, neuromyotonia. Multiple Sclerosis: Etiology, pathophysiology, classification, clinical sign and symptoms, investigations, differential diagnosis, medical management, and complications. Dementia.

PSYCHIATRY: Mental deficiency- (descriptive): Mental retardation, Learning disabilities, Autistic behaviour.

NEUROSURGERY: Infections of brain and Spinal Cord: pathophysiology, classification, clinical sign and symptoms, investigations, differential diagnosis, medical management, surgical management and complications. Management of Pain, Electrical Stimulation of Brain and Spinal cord.

Mode: Flipped Class Room, Case Discussion, Lectures.

REFERENCE BOOKS:-

1. Walton, John Brain's Disease of the Nervous System Oxford university press,
2. Delhi 1998.
3. Haerer, A.F. Neurological Examination Lippincott, Philadelphia 1999.
4. Ahuja, Neeraj Short Text Book Of psychiatry Jaypee, New Delhi 1999.
5. Haslett, C. Davidson's Principal and Practice of Medicine Churchill Living stone,
6. London 1999
7. Kasper, D.L Harrison's Principles of Internal Medicine Mc-Graw Hill, New
8. York 2005 2V.

TEXT BOOKS:

1. Bannister, R. Brain and Bannister Clinical Neurology Oxford university press,
2. oxford 2002. Chamberlain, E.N. Symptoms and Signs in Clinical Medicine John
3. Wright, Bristol 1974. Friedman, H.H. Problem-Oriented Medical Diagnosis Little

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4. Browne, Boston 1979 3V 4 Swash, Michael Hutchison's Clinical Method W B
5. Saunders, London 2000. Rees, Lingford New Short Text Book Of psychiatry
6. Arnold, New Delhi 1988.

LIST OF PRACTICALS (Posting in hospitals)

1. Students shall be posted for 10 hrs. in Neurology units. They shall do clinical
 2. checking and ward work to acquaint themselves to neurological and medical
 3. conditions
 4. Clinical assessment of neurological function to be taught through bedside or
 5. demonstration in clinics, of the following:
 6. Basic history taking to determine whether the brain, spinal cord or peripheral
 7. nerve is involved.
 8. Assessment of higher mental function such as Orientation, Memory, Attention,
 9. Speech and Language. Assessment of Cranial nerves.
 10. Assessment of Motor system.
 11. Assessment of Sensory function, Touch, Pain and Position.
 12. Assessment of Tone-Spasticity, Rigidity and Hypotonia.
 13. Assessment of Cerebral function.
 14. Assessment of Higher cortical function - Apraxia.
 15. Assessment of Gait Abnormalities.
 16. Students shall be posted for 10 hrs. in Neurosurgery units. They shall do clinical
 17. checking and ward work to acquaint themselves to neurological and surgical
- Conditions.



School of Nursing and Paramedical
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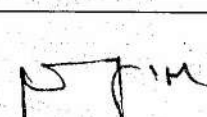

Department of Paramedical

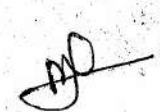
SYLLABUS

Bachelor of Physiotherapy (BPT)
4½ YEAR DEGREE COURSE

Year	BPT 3rd Year
Subject	Orthopedics
Time	130 (100 Theory + 30 Practical) hrs.

Course code	Orthopedics	
BPHSI20Y302		
Pre-requisite	Nil	Syllabus version
Course Objectives:		
<ol style="list-style-type: none"> 1. Gain the skill of clinical examination & interpretation of the preoperative cold cases & all the post- operative cases. 2. To Guide students to better drafting in critical conditions. 3. To correlate the radiological findings with the clinical findings . 		
Course Outcome:		
At the end of the course, the candidate will		
<ol style="list-style-type: none"> 1. Be able to discuss the Patho-physiology, clinical manifestations & conservative/Surgical management of various traumatic & cold cases of the Musculo-skeletal Conditions 2. Gain the skill of clinical examination & interpretation of the preoperative cold cases & all the post- operative cases 3. Will be able to read & interpret a] salient features of the X-ray of the spine & Extremities 4. Pathological/ biochemical studies pertaining to Orthopaedic Conditions 5. Will be able to correlate the radiological findings with the clinical findings . 		
Student Learning Outcomes (SLO):		
<ol style="list-style-type: none"> 1. Students will be able to demonstrate their ability to perform an appropriate primary/initial assessment of the ill or injured patient in the prehospital setting. 2. Students will be able to demonstrate their ability to perform an appropriate secondary/focused history and physical exam of the trauma patient in the pre-hospital setting. 3. Students will be able to perform an appropriate secondary/focused history and physical exam for patients with medical complaints or signs and symptoms in the pre-hospital setting. 		
Unit – 1		20
Introduction to Orthopedics: Terminology, types of common etiology, clinical examination, Common investigation, Outline of management – Operative & Non-		



Operative. Fractures and Dislocations: Briefly mention Types of fracture and dislocations, symptoms and signs of above injuries and their Principles of management and Complications, Fracture healing (Normal & pathological) Calcium-phosphorus metabolism - normal and pathological states. Prevention and treatment of common complications: Fracture disease, Volkmans ischaemic contracture, Sudeck's osteo dystrophy, Myositis ossificans, Ligament injuries, Shoulder- hand syndrome etc.

Unit - 2	20
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Spinal column: fractures, management and complications of Spinal injuries spinal deformities like Scoliosis, Kyphosis, and Lordosis etc. Injuries of upper limb and lower limb, enumerate major fracture and joint injuries, brief description of principle of management and complications. Congenital anomalies and other deformities: Brief descriptions of following congenital conditions along with the outline of treatment: Congenital Hip Displasia, Congenital Talipes Equinovarus / Calcaneoalgus, Arthrogyrosis, Multiplex Congenita, Congenital Torticollis, Scoliosis, Acromelia, phocomelia, Amelia, Spina Bifida: all types, clinical presentation, sequel & management. Development diseases of skeleton: (Brief description only) Osteogenesis imperfecta, heterotopic ossification, Osteochondritis, Perthes' disease.

Unit - 3	20
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Neuromuscular diseases: Volkmann's Ischaemic contracture, obstetrical paralysis, and peroneal muscular atrophy, Poliomyelitis : common deformities due to PPRP and their orthopaedic aspects and management. Spinal deformities: clinical features, diagnosis & Conservative management of Scoliosis, Kyphosis, and traumatic deformities. Bone and Joint infections: Etiology, clinical feature, management and complications of Septic arthritis, Bacterial infections , Osteomyelitis, Tuberculosis and leprosy, Pott's paraplegia. Neuro-vascular Diseases (Brief Description): orthopaedic aspects and treatment of - Nerve injuries (major nerves), Plexus injuries. Arthritis & Rheumatic Diseases: Outline of Pathology , Clinical features, evaluation & conservative management of various categories of arthritis :- Rheumatoid arthritis, Juvenile Ch. Arthritis, Reiter's

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disease, Polymyalgia rheumatica, Gout, osteoarthritis, and Ankylosing spondylitis, Neuropathic- joints, haemophilic arthropathy, Avascular necrosis.

Unit - 4**20**

Sprain and Strains: Common sites of sprains and muscle strains, their clinical manifestations and treatment. Bony & Soft tissue injuries: Injury & repair, Clinical presentation, evaluation & general principles of rehabilitation management (Brief Description). Upper Limbs: Clinical presentation, evaluation & conservative management of rotator cuff injuries, adhesive capsulitis, bursitis, biceps tendonitis, shoulder dislocation, Frozen shoulder and other painful conditions of shoulder, snapping & winged scapula, tennis and golfer elbow, olecranon bursitis, soft tissue injuries, sprains and strains, Arthritic conditions, tenosynovitis, Carpal tunnel syndrome, deformities Dupuytren's contracture, VIC, reflex sympathetic dystrophy, common fractures and dislocations. Lower Limb: Clinical presentation, evaluation and conservative management of Arthritic conditions, soft tissue injuries, sprains and strains, achillis tendonitis, bursitis, Painful heel conditions, Tendinitis, plantar fasciitis, deformities, reflex sympathetic dystrophy, neuropathic Joints, common fractures and dislocations.

Unit - 5**20**

Spine: clinical presentation, evaluation and conservative management of - Low backache, disc prolapse, cord compression, spondylosis, Ankylosing spondylosis, Spondylyolsthesis and Spinal Fractures. Inflammatory and degenerative conditions: Causes, clinical features, complications, deformities, radiological features, management - conservative and surgical management for the following conditions: Osteoarthritis, rheumatoid arthritis, ankylosing spondylitis, Gouty arthritis, Psoriatic arthritis, hemophilic arthritis, Charcot's joints. Amputations - Justification, outline of surgical approaches, incisions, procedures, Classification, indications, contraindications, complications, pre-operative, operative and postoperative management.

Principles of operative Managements: Orthopaedic surgeries, Indications, classification, types, principle of management of the following surgeries:

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Arthrodesis, Arthroplasty (partial and total replacement), Osteotomy, external fixators, Spinal strabilization surgeries, Tendon operations, Arthroscopy, total joint replacements, limb re-attachments. Bone and Joint Tumors: Classification, clinical features and management of Osteoma, Osteosarcoma, Osteoclastoma, Ewings tumor, Multiple myeloma and Secondaries.

Mode: Flipped Class Room, Case Discussion, Lectures.

Reference Books :-

1. Outline of fracture by Adams. Outline of Orthopedics by Adams. Orthopedics and Traumatology by Natarajan.
2. Aplay's Orthopedics. Joshi, J. and Kotwal, P. Essential Of Orthopedics and Applied Physiotherapy Elsevier, New Delhi.
3. Terke, Samuel L. Orthopedics: principles and their application Lippencott, New York. Magee, David J. Orthopedic and Physical Assessment Saunders, Philadelphia.

Text books:-

4. Maheshwari, J Essential Orthopedics. Solomon, Louis Apley's Systems of Orthopedics and Fracture Arnold, London.
5. McRae, R. and Esser, Max Practical Fracture Treatment Churchill Living stone, London.

List of Practical (posting in hospitals)

Students do clinical checking, ward work, hospital posting for a period of one month to acquaint themselves with traumatology and orthopedic conditions.

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School of Nursing and Paramedical
Sciences

Department of Paramedical

SYLLABUS

Bachelor of Physiotherapy (BPT)
4½ YEAR DEGREE COURSE

Year	BPT 3rd Year
Subject	Applied Biomechanics & Kinesiology
Time	100 hrs Theory

Course code	Applied Biomechanics & Kinesiology	
BPHSI20Y303		
Pre-requisite	Nil	Syllabus version
Course Objectives:		
<ol style="list-style-type: none"> 1. To acquire a skill of assessment of sensations, superficial and deep reflexes, pulse rate/ Blood pressure, Chest expansion/respiratory rate, and limb length/girth measurement on Models. 2. To demonstrate and also acquire the skill of relaxation. 3. To describe types of Goniometer, merits and demerits of goniometry and to demonstrate and acquire the skill of measuring ROM with goniometer. 4. To describe the skill and usefulness of group and recreational activities-and will be able to demonstrate general fitness exercises used in Physical Training. 5. To be able to define Yoga and its types, its physiological and Psycho-somatic effects 6. effects 7. To be able to demonstrate General Fitness exercises and shall gain fitness for self 		
Course Outcome:		
<p>At the end of the course, the candidate will-</p> <ol style="list-style-type: none"> 1. Student will be able to To define the various terms used in mechanics, Biomechanics and Kinesiology. 2. Student will be able to Recall the basic principles of Physics related to mechanics of movement /motion & will be able to understand the application of such principles to the simple equipment designs, and their efficacy in therapeutic gymnasium and various starting positions used in therapeutics. 3. Student will be able to demonstrate passive movements in terms of various Anatomical planes. 		





Student Learning Outcomes (SLO):

1. Student will be able to describe and also acquire the skill of use of various tools of
2. the Therapeutic gymnasium demonstrate various starting and derived positions.
3. Student will acquire the skill of application of various massage manipulations and
4. describe the Physiological effects, therapeutic use, merits /demerits of the same.
5. Students will be able to demonstrate their ability to perform an appropriate secondary/focused history and physical exam of the trauma patient in the pre-hospital setting.
6. Students will be able to perform an appropriate secondary/focused history and physical exam for patients with medical complaints or signs and symptoms in the pre-hospital setting.

Unit – 1**20**

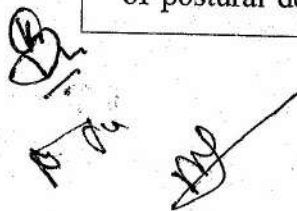
APPLIED BIO-MECHANICS: Introduction: Definition and Aim of Biomechanics, Scope and Importance of Biomechanics in Physiotherapy and Bioengineering Kinematics and Kinetics: Definition, Descriptors of motion, Types of motion, and Axes and planes. Definition of force, Statics and Dynamics, Inertia, Classification of forces, Composition and Resolution of forces: Linear, Concurrent and Parallel force system, Muscle force, Friction force, Torque, Anatomic Pulley and its role in movement

KINESIOLOGY: Joint structure and function, Types of joints Joint functions Kinesiology Origin of human movement and its significances, Analysis of movement – kinetics and kinematics , Body links and motion parts.

Unit – 2**20**

APPLIED BIO-MECHANICS: Gravity: Definition, Center of Gravity and Center of Mass, Location of Center of Mass, Line of Gravity, Stability and

<p>Equilibrium, Linear and Angular Equilibrium, Biomechanics of Bone, collagenous tissue and muscle: Structure, function and Mechanics in health and in disease, injury, immobilization, exercise and overuse.</p> <p>KINESIOLOGY: General effects of injury and disease on joint functioning. Brief surgical anatomy (structural components, and alignment). Joint range of motion, axis and plane of motion. Joint movements, mobility and stability, restrictions and limitations, end feels. Abnormal deviations in joints in disease and injury of the following joint complexes: Shoulder joint complex. Elbow joint complex. Wrist and hand complex Hip joint complex.</p>	
Unit - 3	20
<p>APPLIED BIO-MECHANICS: Biomechanics of Spine: Structure, Function and Mechanics in health and in disease. Biomechanics of Upper Extremity: Structure, Function and Mechanics in health and in disease.</p> <p>KINESIOLOGY: Knee joint complex, Ankle-foot complex, Vertebral column, Weight distribution (lower limb joints)</p>	
Unit - 4	20
<p>APPLIED BIO-MECHANICS: Biomechanics of Lower Extremity: Structure, Function and Mechanics in health and in disease. Biomechanics of Locomotion and Gait Deviations, Origin of human movements and significance, Forms of human movements, their characteristics and factors affecting them.</p> <p>KINESIOLOGY: Abnormal Posture: 1. Definition and description. Analysis of postures (anterior, lateral and posterior), alignment of joints in different postural deviations. Abnormal postures – biomechanical analysis and effects. Principles of Postural correction.</p>	
Unit - 5	20
<p>APPLIED BIO-MECHANICS: Biomechanics of Activities of Daily Living, Work Analysis. Posture: Definition, Biomechanics of Good Posture, Biomechanics of postural deviations, effect of age, disease, occupation and pregnancy on good</p>	



posture.

KINESIOLOGY: Pathological Gait, Phases of gait – biomechanical analysis. Time and distance parameters – biomechanical significance. Joint motion – chains of movement. Effects of pain, deformity, weakness in pathological gaits. Management of pathological gaits.

Mode: Flipped Class Room, Case Discussion, Lectures.

REFERENCE BOOKS:

1. Norkin, C.C. and White, J. Measurement of Joint Motion Jaypee, New Delhi 1995. Kapandgi,
2. I.A. Physiology of Joints Churchill- Livingstone 1998 3V. Tritschler, Katbleen Practical Measurement and Assessment Lippincott, New York 2000 8 Leveau, Biomechanics of Human Motion.

TEXT BOOKS:

3. Levangie P.K. Joint Structure and Function: Comprehensive Ara Jaypee, New Delhi 1998. Magee,
4. David J. Orthopedic and Physical Assessment Saunders, Philadelphia 2002. Donatelli, R.A. Biomechanics of the Foot and Ankle Davis, Philadelphia 1996. Mow, Van C. and Hayes, W.C. Basic Orthopedic Biomechanics Lippincott, New York 1997.

NTM

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School of Nursing and Paramedical
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Department of Paramedical

SYLLABUS

Bachelor of Physiotherapy (BPT)
4½ YEAR DEGREE COURSE

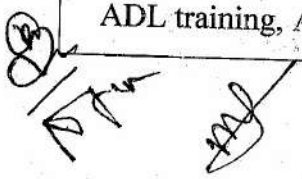
Year	BPT 3rd Year
Subject	Physiotherapeutic in Neurology & Neurosurgery
Time	200 hrs Theory (110 hrs theory + 90 hrs practical)

Course code	Physiotherapeutic in Neurology & Neurosurgery	
BPHSI20Y304		
Pre-requisite	Nil	Syllabus version
Course Objectives:		
<ol style="list-style-type: none"> 1. To Demonstrate comprehensive understanding of nervous system 2. To acquire the knowledge in nervous system that are required to be practiced in community and at all levels of health care system. 3. To Understand relevant investigations which will help to know about the important medical conditions. 		
Course Outcome:		
<p>At the end students will be able to</p> <ol style="list-style-type: none"> 1. Describe pre-operative evaluation, surgical indications & various surgical approaches & post operative management in various abdominal/ thoracic/peripheral vascular conditions/ENT conditions / Plastic Surgery conditions 2. Recall the surgical approaches in the form of line diagram & will be able to describe the components of soft tissues cut to reach the target tissue & the possible Post operative complications 3. Be able to read & interpret findings of the X ray-chest. 		
Student Learning Outcomes (SLO):		
<ol style="list-style-type: none"> 1. Students will be able to acquire the knowledge in nervous system that are required to be practiced in community and at all 2. Students will be able to understand levels of health care system. 3. Students will be able Understand relevant investigations which will help to know about the important medical conditions. 4. Students will be able Recall the surgical approaches in the form of line diagram & will be able to describe the components of soft tissues cut to reach the target tissue & the possible Post operative complications 		





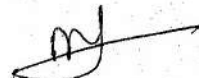
Unit - 1	22
<p>Review of Neuroanatomy and Physiology. Symptomatology of Neurological disorders, Role of investigations in differential diagnosis, diagnosis and clinical examination of C.N.S. functions including cranial nuclei, Principles of examination of higher function and applicability in training. Physiotherapy evaluation of a neurological patient, electro diagnostic procedures, interpretations and prognosis in different neurological conditions.</p>	
Unit - 2	22
<p>Developmental disorders of C N S, Early detection of brain damaged child, Risk babies, Neuropediatric examination, Developmental programmes and Delayed milestones, Neuro-developmental screening test, Minimum Brain Damage, Sensory, Motor, Functional Psycho-social behaviours of a child.</p>	
Unit - 3	22
<p>Developmental physiotherapy programs (Neuro developmental approaches), reduction and retraining techniques in neurological conditions, approaches like: Bobath's, Rood's, PNF, Vojta techniques, biofeedback, Brunnstorm, Motor Relearning programming .Primitive patterns and abnormal motor behaviour due to brain damage, its control and training with reference to gait and hand function. Assessment and principles of therapeutic management of following neurological conditions: Stroke, meningitis, encephalitis, basal ganglion diseases , Parkinson's disease, Cerebral palsy, Ataxia, Cerebellar Ataxia, Friedreich's Ataxia , Brain tumors, Traumatic brain injury: Types and Mechanisms of head injury, Clinical features, potential complications, Physiotherapy principles of immediate and postoperative therapeutic management.</p>	
Unit - 4	22
<p>Assessment and Treatment techniques of:- Motor Neuron Disease ,Disseminated sclerosis, Transverse myelitis, Spinal tumors, Poliomyelitis, Syringomyelia, spina bifida, Subacute combined degeneration of spinal cord. Spinal cord injury: review of anatomy and physiology, Physiotherapy Assessment of Spinal cord injury, Principles of Physiotherapy at various stages of Spinal cord injury, Rehabilitation goals and ADL training, Assessment and treatment of neuropathies.</p>	



Unit - 5	22
<p>Peripheral nerve injuries, surgical resection & repair: Classification & types, Functional assessment, investigation, diagnosis & prognosis, Physiotherapeutic management, Assessment and treatment of Myopathies including neuromuscular junction disorders, Neurosurgery: Post surgical Physical therapy in neurosurgical procedures – craniotomy, shunts, SOL resection, surgical treatment of spasticity, cervical cord decompression.</p>	
<p># Mode: Flipped Class Room, Case Discussion, Lectures.</p>	
<p>REFERENCE BOOKS</p> <ol style="list-style-type: none"> 1. Key issue in Neurological Physiotherapy by Ada/Canning. 2. Elements of Paediatric Physiotherapy by Eckersy. 3. Tidy's Physiotherapy. 4. Hislop, H.J. and Montgomery, J. Daniels and Worthingham's Muscle Testing: Bobath, Berta Adult Hemiplegia: Evaluation and treatment Butterworth, Oxford 1990 . Shepherd, R.B. Physiotherapy in Paediatrics Butterworth- Heinemann, Oxford 1995 . Downie, <p>TEXT BOOKS</p> <ol style="list-style-type: none"> 1. Cash's Textbook of Neurology for Physiotherapist by John Cash. 2. P.A. Cash's Textbook of Neurology for Physiotherapy Jaypee, New Deli 1993 3. Swaner, K.A. and LaVigne, J.M. Brunnstom's Movement Therapy in Hemi Lippincott, New York 1992 4. Techniques of Manual Examination W.B. Saunders, Philadelphia 2002 	
List of Practical – (BPHSI20Y305)	90
<p>Physiotherapy technique applicable for neurological rehabilitation for the for the above conditions.</p>	

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School of Nursing and Paramedical
Sciences


Department of Paramedical

SYLLABUS

Bachelor of Physiotherapy (BPT)
4½ YEAR DEGREE COURSE

Year	BPT 3rd Year
Subject	Physiotherapeutic in Orthopaedic Conditions
Time	200 hrs Theory (120 hrs Theory + 80 hrs Practical)

Course code	Physiotherapeutic in Orthopaedic Conditions	
BPHSI20Y305		
Pre-requisite	Nil	Syllabus version
Course Objectives:		
<ol style="list-style-type: none"> 1. To prompt introspection and motivate students towards self-appraisal, goal-setting and problem solving. 2. Familiarize students with negotiation techniques and importance of right attitude for better coordination and team building. 3. Guide students to better drafting in creative and critical compositions. 4. Help students review policies of global importance affecting corporate interactions. 		
Course Outcome:		
<ol style="list-style-type: none"> 1. Students will be able to connect science and technology with society. 2. Students will learn to prepare for Group Discussions and thus, be able to perform well in discussions, debates and interviews. 3. Examine and analyze the complex nature and seriousness of the patient's condition or extent of injuries to assess the need for advanced emergency medical care, and perform complex medical care based on assessment findings of the patient's condition and/or situation. 4. Demonstrate an increased depth and breadth of patient care in the prehospital setting by applying principles from evidence-based research in emergency medicine. 		
Student Learning Outcomes (SLO):		
<p>Students will be able to demonstrate their ability to perform an appropriate primary/initial assessment of the ill or injured patient in the prehospital setting.</p> <p>Students will be able to demonstrate their ability to perform an appropriate secondary/focused history and physical exam of the trauma patient in the pre-hospital setting.</p> <p>Students will be able to perform an appropriate secondary/focused history and</p>		





physical exam for patients with medical complaints or signs and symptoms in the pre-hospital setting.

Students will be able to formulate an appropriate treatment plan to include administration of IV fluids and/or **pharmacological medications** for the trauma patient in the prehospital setting.

Unit – 1

24

Traumatology and Orthopedics: - Classification of fractures, causes and types, Signs and symptoms, Complications, Healing and factors affecting , Principles of fracture management. Principles of Physiotherapy management, management of complication. Dislocation - Common sites, signs and symptoms. Principles of Physiotherapy evaluation and Management of an orthopaedic patient. General principles of physiotherapy in fracture management including complications at different stages, Post fracture - assessment and PT management.

Unit – 2

24

Upper Limb: Scapula, Clavicle, Humerus, Ulna and Radius, Colle's fracture and Crush injuries of Hand, Lower Limb: Fracture of Pelvis, Neck of Femur, Shaft of Femur, Patella, Tibia and Fibula, Pott's Fracture, Fractures of Tarsal and Metatarsal bones .Management of Fracture of Spine with or without neurological deficit. Specific fractures and their complete physiotherapy assessment and management. Soft Tissue injuries: Assessment and therapeutic management of Sprains, strains, ligament and cartilage tear (Tear of semilunar cartilage and cruciate ligament of knee)/rupture, Synovitis, Capsulitis, Volkman's ischamic contracture. Rotator cuff tendinitis, Ankle sprains, Tennis elbow, Golfer's Elbow, Retrocalcaneal bursitis.

Unit – 3

24

Assessment, treatment and management of Degenerative and infective Conditions: Osteoarthritis of major joints. Spondylosis, spondylitis, spondylolisthesis, Spondylolisthesis, Prolapsed intervertebral disc, Lumbar cord decompression, peri-arthritis, Rotatory cuff lesion of shoulder, Tuberculosis of spine, Bone and Major joints, perthes disease, Avascular bony necrosis at hip joint, Rheumatoid arthritis, Ankylosing spondylitis,

Deformities: Congenital: Torticollis and Cervical rib, thoracic outlet syndrome, C.T.E.V., Pes cavus and Pes Planus and Other common deformities. Acquired: Scoliosis, Kyphosis, Lordosis, Coxa vara, Genu Valgum, Genu varum and Genu recurvatum.

Unit – 4

24

General principles of physiotherapy assessment and management in dislocations including complications with special consideration in shoulder dislocation, Hip dislocation. Orthopedics Surgery: General principles of assessment, physiotherapy management in surgical conditions like – Osteotomy, Joint Replacements, ORIF, Arthroplasty, Arthodesis, Ilizarov's technique, Tendon transfers, soft tissue releases & soft tissue repair, Tendon transplant, Grafting, Arthroscopy, spinal Stabilization, reattachment of limbs, operation in C.P. and Polio.

Unit – 5

24

Amputations: Levels of Amputation of upper and lower extremity, pre & postoperative evaluation & principles of management, stump bandaging, Pre and Post Prosthesis fitting assessment and management (check-out of Prosthesis Training) Complications of Amputations and their management. Manipulation therapy - General assessment, indications, contra indications, Principles and Techniques of Therapy and Factors considered in therapy. Brief introduction to schools of manual therapy (Maitland, Kaltenborne, Cyriax, Mulligan, Mackenzie)

Mode: Flipped Class Room, Case Discussion, Lectures.

REFERENCE BOOKS:

1. Cash's textbook of Orthopedics and Rheumatology. Physiotherapy in Rheumatology. Physiotherapy in disorders of brain. Clinical Orthopedics for Physical Therapy - by Campbell, Tidy's Physiotherapy, Clinical Orthopedics for Physical Therapy - by Richardson's & Sadowsky, Smith, Laura K Brunnstrom's Clinical Kinesiology Jaypee, New Delhi Buckley, John Exercise on Prescription Butterworth-Heinemann, Boston, Downie, Patricia

A. Cash's Textbook of Orthopedics and Rheumatology Jaypee, New Delhi,
 Donatelli, R. A. and Wooden, M.J. Orthopedic Physical Therapy Churchill-
 Livingstone, New York, Tidswell, Marian Orthopedic Physiotherapy Mosby,
 London.

Text Books :-

1. Cash's textbook of Orthopedics and Rheumatology.
2. Physiotherapy in Rheumatology.
3. Physiotherapy in disorders of brain.
4. Clinical Orthopedics for Physical Therapy - by Campbell
5. Tidy's Physiotherapy.
6. Clinical Orthopedics for Physical Therapy - by Richardson's & Sadowsky.
7. Smith, Laura K Brunnstrom's Clinical Kinesiology Jaypee, New Delhi'
8. Buckley, John Exercise on Prescription Butterworth-Heinemann, Boston
9. Downie, Patricia A. Cash's Textbook of Orthopedics and Rheumatology
 Jaypee, New Delhi
10. Donatelli, R. A. and Wooden, M.J. Orthopedic Physical Therapy Churchill-
 Livingstone, New York .

LIST OF PRACTICALS-

80

Various physiotherapy modalities and treatment techniques for the above-mentioned conditions to be demonstrated and practiced by the students.

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School of Nursing and Paramedical Sciences

Department of Paramedical

SYLLABUS

Bachelor of Physiotherapy (BPT) 4½ YEAR DEGREE COURSE

Year	BPT 3rd Year
Subject	Physical Evaluation, Diagnosis & Prescription
Time	200 hrs Theory (120 hrs Theory + 80 hrs Practical)

Course code	Physical Evaluation, Diagnosis & Prescription	
BPHSI20Y307		
Pre-requisite	Nil	Syllabus version
Course Objectives:		
<ol style="list-style-type: none"> 1. To prompt introspection and motivate students towards self-appraisal, goal-setting and problem solving. 2. Familiarize students with negotiation techniques and importance of right attitude for better coordination and team building. 3. Guide students to better drafting in creative and critical compositions. 4. Help students review policies of global importance affecting corporate interactions. 		
Course Outcome:		
<ol style="list-style-type: none"> 1. Students will be able to connect science and technology with society. 2. Students will learn to prepare for Group Discussions and thus, be able to perform well in discussions, debates and interviews. 3. Examine and analyze the complex nature and seriousness of the patient's condition or extent of injuries to assess the need for advanced emergency medical care, and perform complex medical care based on assessment findings of the patient's condition and/or situation. 4. Demonstrate an increased depth and breadth of patient care in the prehospital setting by applying principles from evidence-based research in emergency medicine. 		
Student Learning Outcomes (SLO):		
<ol style="list-style-type: none"> 1. Students will be able to demonstrate their ability to perform an appropriate primary/initial assessment of the ill or injured patient in the prehospital setting. 2. Students will be able to demonstrate their ability to perform an appropriate secondary/focused history and physical exam of the trauma patient in the pre-hospital setting. 3. Students will be able to perform an appropriate secondary/focused history and physical exam for patients with medical complaints or signs and 		

symptoms in the pre-hospital setting.

4. Students will be able to formulate an appropriate treatment plan to include administration of IV fluids and/or **pharmacological medications** for the trauma patient in the prehospital setting.

Unit – 1	24
<p>General principles of Human development & maturation: Aspects: physical, motor, sensory, cognitive, emotional, cultural, social. Factors influencing human development & growth: Biological, environmental, inherited. Principles of maturation - in general and anatomical directional pattern cephalo – caudal, proximo – distal centro – lateral, mass to specific pattern, gross to fine motor development. Reflex maturation tests. Development in specific fields: Oromotor development, sensory development, neurodevelopment of hand function.</p> <p>Electrodiagnosis: Bioelectricity-Physiology of generation & propagation of action potential, volume conduction. Therapeutic current-as a tool for electrodiagnosis. Physiological principles, use of alternating & direct currents in electro-diagnosis such as sensory & Pain threshold, Pain tolerance, -Short & long pulse test, S.D. curves, Chronaxie & Rheobase, accommodation ratio. Surface and Needle Electromyography, Nerve conduction velocity Test (Motor and Sensory), Reflex Study, late responses <u>H'</u> and <u>F'</u> Waves, Cerebral Evoked Potential, Analysis in Normal and Pathological conditions. E.M.G. instrumentation, basic components, panel diagram, types of electrodes. Principles of Electro- myography, motor unit –Normal characteristics-activity at rest, recruitment/frequency pattern at minimal activity, Interference pattern</p>	
Unit – 2	24
<p>Assessment of Neurological dysfunctions : Higher functions, cranial nerves, sensations & sensory organization, body image, Muscle tone, Voluntary movement and voluntary control tests (isolated and skilled), Abnormal movements -Clonus, Tremor, Chorea, Athetosis , Reflexes: superficial & deep, Primitive Reflexes, muscle strength, Myotomes and Dermatomes, Upper motor and lower motor neuron lesions , Nerve entrapments, Test for disorder of</p>	

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programme (i.e. cerebellum basal ganglia lesions) and co- ordination tests , balance, posture, gait, Neural control of bladder. Perceptual motor dysfunction. Investigative Methods in Modern Medicine like EEG, MRI, CT Scan
 Scales: FRT, Berg's Balance, modified Ashworth, Glasgow Coma, TUG, FIM .
 Functional Diagnosis using International Classification of Function, Disability & Health (I.C.F). Interpretation of electro diagnostic findings, routine biochemical investigations

Assessment of Musculoskeletal Dysfunction: Postures and postural disorder , Tightness, deformity, ROM joint mobility, muscle strength and endurance , muscle girth, pelvic inclination, limb length , segmental Measurement of body part (femur, tibia etc.), trick movement, special tests, Angle of scoliotic curve , Gait analysis in pathological conditions and measurement of gait parameters . Functional diagnosis using ICF. Interpretation of X-ray of extremities & spine, routine bio-chemical investigations, CT scan, MRI.

Unit - 3

24

Assessment of cardiopulmonary dysfunction: Posture (recumbent, erect orthopnoeic). Vital parameters, Breathing pattern and breath hold (rate, rhythm, use of accessory muscle) Chest deformity, Cough, Sputum, Tactile and vocal fremitus, Mobility of thoracic spine and rib cage, Percussion, chest expansion measurements. Heart rate, blood pressure, heart sounds, pulse rate (volume and pressure). Exercise Tolerance: six minutes walk test, theoretical bases of Bruce's protocol, step test. Ankle Brachial Index, tests for peripheral arterial & venous circulation. Cardiac Efficiency Tests: ECHO, Ultra-sonography, Clinical Monitoring, Stress ECG , Treadmill and Ergometry. Functional diagnosis using ICF breath holding test, breath sounds, rate of perceived exertion (RPE), peak flow rate, Measurement of lungs volumes and lung capacities, blood gas level.

Unit - 4

24

Interpretation of X-ray chest, routine bio-chemical investigations, ABG, PFT, ECG (normal values)

Assessment of pelvic floor muscle strength and function: Digital evaluation of

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<p>Vagina, Perineometer, Pad Test.</p> <p>Assessment of pain: Intensity & quality. Objective assessment & documentation: VAS, Numerical Rating Scale. Other scales.</p> <p>Assessment of Hand: Sensations, mobility of joints, strength. Special tests, Hand function: Precision & power grips.</p>	
Unit - 5	24
<p>Assessment of Obesity: Classification, Assessment – BMI, Waist circumference, Waist – Hip ratio</p> <p>Functional Evaluation: Mobility in bed- Transfer, Ambulation. Personal care – Eating, Dressing, Washing, Bathing. House hold Jobs. Work and Recreation.</p> <p>Disability Evaluation: Gait and Gait parameters, percentage of disability, temporary or permanent.</p> <p>Introduction to Quality of Life Questionnaire, Principles of prescription writing and prescription writing of Therapeutic Modalities. Biophysical Measurements & Ergonomics. Work Physiology and Exercise prescription: Ergonomics considerations for Exercise, Work Physiology Considerations, Exercise Analysis and planning (orthopedic, sport, neurological, cardiothoracic conditions related to physiotherapy).</p>	
# Mode: Flipped Class Room, Case Discussion, Lectures.	
<p>Pediatric developmental therapy - Sophie Levitt. Orthopedics physical examination by Magee. Physical Rehabilitation Assessment and Treatment - O'Sullivan Schmitz. Electrotherapy explained - Low & Reed. Clayton's electrotherapy (6th and 9th Ed.). Clinical Electro Therapy - Nelson-Currier. Clinical Electromyography – Mishra. Cash's textbook of chest, heart, vascular disorder for physiotherapist. Physiotherapy for respiratory and cardiac problems - Webber and Pryor. Cash's textbook of General Medicine and surgical conditions for physiotherapists. Clinical Electromyography – Kimura. Orthopaedic Physical therapy - Donnatelli</p>	

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TEXT BOOKS:-

1. Pediatric developmental therapy - Sophie Levitt
2. Orthopedics physical examination by Magee
3. Physical Rehabilitation Assessment and Treatment - O'Sullivan Schmitz
4. Electrotherapy explained - Low & Reed
5. Clayton's electrotherapy (6th and 9th Ed.)
6. Clinical Electro Therapy - Nelson-Currier

REFERENCE BOOKS:-

7. Clinical Electromyography - Mishra
8. Cash's textbook of chest, heart, vascular disorder for physiotherapist
9. Physiotherapy for respiratory and cardiac problems - Webber and Pryor
10. Cash's textbook of General Medicine and surgical conditions for physiotherapists
11. Clinical Electromyography - Kimura
12. Orthopaedic Physical therapy - Donnatelli.

LIST OF PRACTICALS -**80**

Skills to be practiced in following condition

1. Pediatric conditions
2. Neurology conditions
3. Cardio respiratory conditions
4. Orthopedics conditions
5. Sports conditions
6. Electro diagnosis and biophysical diagnosis
7. Case presentation with Physical & Functional diagnosis in medical – surgical conditions

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**School of Nursing and Paramedical
Sciences**

Department of Paramedical

SYLLABUS

**Bachelor of Physiotherapy (BPT)
4½ YEAR DEGREE COURSE**

Year	BPT 4th Year
Subject	Community PT, Rehabilitation & Disability prevention
Time	160 hrs Theory

Course code	Community PT, Rehabilitation & Disability prevention	
BPHSI20Y401		
Pre-requisite	Nil	Syllabus version
Course Objectives:		
<ol style="list-style-type: none"> 1. To prompt introspection and motivate students towards self-appraisal, goal-setting and problem solving. 2. Familiarize students with negotiation techniques and importance of right attitude for better coordination and team building. 3. Guide students to better drafting in creative and critical compositions. 4. Help students review policies of global importance affecting corporate interactions. 		
Course Outcome:		
<ol style="list-style-type: none"> 1. Students will be able to connect science and technology with society. 2. Students will learn to prepare for Group Discussions and thus, be able to perform well in discussions, debates and interviews. 3. Examine and analyze the complex nature and seriousness of the patient's condition or extent of injuries to assess the need for advanced emergency medical care, and perform complex medical care based on assessment findings of the patient's condition and/or situation. 4. Demonstrate an increased depth and breadth of patient care in the prehospital setting by applying principles from evidence-based research in emergency medicine. 		
Student Learning Outcomes (SLO):		
<ol style="list-style-type: none"> 1. Students will be able to demonstrate their ability to perform an appropriate primary/initial assessment of the ill or injured patient in the prehospital setting. 2. Students will be able to demonstrate their ability to perform an appropriate secondary/focused history and physical exam of the trauma patient in the pre-hospital setting. 3. Students will be able to perform an appropriate secondary/focused history 		

and physical exam for patients with medical complaints or signs and symptoms in the pre-hospital setting.

4. Students will be able to formulate an appropriate treatment plan to include administration of IV fluids and/or pharmacological medications for the trauma patient in the prehospital setting.

Unit – 1

32

General Concepts of health and diseases with reference to natural history of disease with pre-pathogenic and pathogenic phase. The role of socio-economic and cultural environment in health and disease. Epidemiology and scope. Role of Epidemiological investigation in public health,

Public Health Administration: Overall view of the health administration setup at Central State and Local self-government levels. Role of Non-Government Organisations in public health care delivery system.

The National Health Programmers: Highlighting the role of social, economic and cultural factors in the implementation of the National Programmes, Primary Health Care, objectives and implementation.

COMMUNITY PT, REHABILITATION & DISABILITY PREVENTION THEORY: Introduction of Rehabilitation & History. Epidemiology of disability (Impairment, disability, phases of disability process, etc.) Principles of Rehabilitation & concept of team approach with rolls of each individual participant. Organization of Rehabilitation unit.

Unit – 2

32

Health Problems of vulnerable groups: Pregnant and Lactating women Infants and Pre-school children, Occupational groups (see below) and Geriatrics.

Occupational Health: Definition, scope, occupational diseases, prevention of occupational diseases and hazards. Role of E S 6. Social security and other measures for the protection of occupational hazards, accidents and diseases. Details of Factory Act, Environmental safety and Compensation acts, ES. .5. Acts.5. In occupational health of industrial workers.

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COMMUNITY PT, REHABILITATION & DISABILITY PREVENTION

THEORY: Disability prevention evaluation & principles of Rehabilitation Management. Role of Physiotherapy in Rehabilitation (Preventive, treatment & restoration). Brief outline of Communication disorder & its implications on Rehabilitation process. Brief outline of psychosocial & vocational aspects of Rehabilitation.

Unit - 3	32
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Family Welfare Programme: Objectives of National Family Welfare Programme and Family Planning Methods. A general idea of advantages and disadvantages of methods Reproductive Child Health Services, Concept, of plan d pregnancies, population dynamics.

Mental Health: Community aspects of Mental Health: Role of Physiotherapists. Therapist in Mental Health Problems such as Cerebral Palsy, Mental retardation etc.

COMMUNITY PT, REHABILITATION & DISABILITY PREVENTION

THEORY: Introduction to Occupational therapy. Activities of daily living, functional assessment & training for functional independence. Brief outline of basic community medicine with special reference to community based Rehabilitation, infrastructure and role of CBR. Assessment of disability in rural & urban setups. Health care delivery system & preventive measures with specific reference to disabling conditions. Community education program.

Unit - 4	32
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Communicable diseases: Diseases transmission concepts, an overall view of communicable diseases (Malaria, Filaria, Tuberculosis, Leprosy, Poliomyelitis, and Viral Encephalitis etc.) classified according to principal mode of transmission, Role of Insects and other Vectors in disease transmission. Control and prevention of communicable diseases, universal immunizatEon programme, Programmes such as ARI, Diarrhoea and Polio Control Programmes. International Health Agencies and National NGOs.

COMMUNITY PT, REHABILITATION & DISABILITY PREVENTION

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THEORY: Application of Physiotherapy skills at community level with special reference to the need at rural level. Role of voluntary Organizations in CBR: Charitable Organizations, Voluntary health agencies – National level and International NGO's, Multilateral and Bilateral agencies. International Health Organizations: WHO, UNICEF, UNDP, UNFPA, FAO, ILO, World bank, USAID, SIDA, DANIDA, Rockefeller, Ford foundation, CARE, RED CROSS.

Unit - 5

32

Non-communicable diseases, Blindness, Accidents, Cancer, IHD, Hypertension, Stroke (CVA).

Vital and health statistics: Basic concepts, Morbidity and Mortality rates, Period, Age and Cause of specific death rates and role of these rates as indicators of health and diseases.

COMMUNITY PT, REHABILITATION & DISABILITY PREVENTION

THEORY: National District Level Rehabilitation Program: Primary rehabilitation unit, Regional training center, District rehabilitation center, Primary Health center, Village rehabilitation worker, Anganwadi worker. Role of Physiotherapy in CBR: Screening for disabilities, Prescribing exercise program, Prescribing and devising low cost locally available assistive aids, Modifications physical and architectural barriers for disabled, Disability prevention, Strategies to improve ADL, Rehabilitation program for various neuro-musculoskeletal and cardiothoracic disabilities.

ORTHOTICS AND PROSTHOTICS: Introduction to surgical anatomy and various pathological deviations with respect to brace fitting. Rationale of prescribing Prosthetic and Orthotic devices. Types of Prosthetic and Orthotic devices: Spinal, Lower limb, and Upper limb. Checkout, usage advice, precautions, and follow-up.

Mode: Flipped Class Room, Case Discussion, Lectures.

Reference Books:

1. Textbook of Preventive and Social Medicine by Dr J E Park.
2. Rehabilitation medicine -- by Joel A. Delisa.

3. Text book of physical diagnosis --- by Mark .M Swartz
4. Physical Rehabilitation ---- by Susan B O'Sullivan , Thomas J Schmitz , George Fluke

Text Books :-

5. Essentials of Physical Medicine and Rehabilitation: Musculoskeletal Disorders, Pain, and Rehabilitation -by Walter R. Frontera MD PhD (Author), Julie K. Silver MD (Author), Thomas D. Rizzo Jr. MD (Author)
6. Delisa's Physical Medicine and Rehabilitation: Principles and Practice - by Walter R. Frontera
7. Parks Text Book Of Preventive & Social Medicine -by K. Park
8. Textbook of Community Medicine -by Bhalwar (Author)

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School of Nursing and Paramedical Sciences

Department of Paramedical

SYLLABUS

Bachelor of Physiotherapy (BPT) 4½ YEAR DEGREE COURSE

Year	BPT 4th Year
Subject	Research Methodology & Biostatistics
Time	100 hrs Theory

44

Course code	Research Methodology & Biostatistics	
BPHSI20Y402		
Pre-requisite	Nil	Syllabus version
Course Objectives:		
<ol style="list-style-type: none"> 1. To prompt introspection and motivate students towards self-appraisal, goal-setting and problem solving. 2. Familiarize students with negotiation techniques and importance of right attitude for better coordination and team building. 3. Guide students to better drafting in creative and critical compositions. 4. Help students review policies of global importance affecting corporate interactions. 		
Course Outcome:		
<ol style="list-style-type: none"> 1. Students will be able to gain knowledge of the basic concepts of Biostatistics & its need for professional practice & research. 2. Students will be able to describe an Over – view on Ethnography & Anthropology, Design & Methodology of an Experiment or Survey, Demography & vital statistics, Sampling & interpretation of Data. 3. Students will be able to emonstrate an increased depth and breadth of patient care in the prehospital setting by applying principles from evidence-based research in emergency medicine. 4. Students will be able to acquire the skills to use on patients, the therapeutic currents, for Electro-diagnosis of sensory, & motor dysfunction & pain. 5. Students will be able to do Interpretation of common investigations used for functional diagnosis. 		
Student Learning Outcomes (SLO):		
<ol style="list-style-type: none"> 1. Students will be able to demonstrate their ability to perform an appropriate primary/initial assessment of the patient in the prehospital setting. 2. Students will be able to demonstrate their ability to perform an appropriate secondary/focused history and physical exam of the patient. 3. Students will be able to perform on focused history and physical exam for patients. 		

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4. Students will be able to formulate an appropriate treatment plan to patient.	
Unit – 1	20
<p>Introduction to Research methodology: Meaning of research, objectives of research, Motivation in research, Types of research & research approaches, Research methods vs. methodology, Criteria for good research. Research problem: Statement of research problem, Statement of purpose and objectives of research problem, Necessity of defining the problem. Research design: Meaning of research design, Need for research design, Features for good design, Different research designs, Basic principles of research design.</p> <p>Measurement & scaling techniques: Measurement in research Measurement scales, sources of error in measurement, Technique of developing measurement tools, Meaning of scaling, its classification, important scaling techniques.</p>	
Unit – 2	20
<p>Methods of data collection: collection of primary data, collection data through questionnaires & schedules, Difference between questionnaires & schedules. Computer technology: Introduction to Computers, computer application in research computers & researcher. Introduction: Meaning, definition, characteristics of statistics. Importance of the study of statistics, Branches of statistics, Statistics and health science , Parameters and Estimates, Variables and their types, Measurement scales.</p>	
Unit – 3	20
<p>Tabulation of Data: Basic principles of graphical representation, Types of diagrams – histograms, frequency polygons, smooth frequency polygon, cumulative frequency curve, Normal probability curve. Measures of Central Tendency: Need for measures of central Tendency, Definition and calculation of Mean – ungrouped and grouped, interpretation and calculation of Median- ungrouped and grouped, Meaning and calculation of Mode, Geometric mean & Harmonic mean, Guidelines for the use of various measures of central tendency.</p> <p>Measures of Dispersion: Range, mean deviation, standard deviation & variance.</p>	

Probability and Standard Distributions: Meaning of probability of standard distribution, the binominal distribution, the normal distribution, Divergence from normality – skewness, kurtosis.	
Unit – 4	20
Correlation & regression: Significance, correlation coefficient, linear regression & regression equation. Testing of Hypotheses, Level of significance, Degrees of freedom. Chi-square test, test of Goodness of fit & student t-test.	
Unit - 5	20
Analysis of variance & covariance: Analysis of variance (ANOVA), what is ANOVA? Basic principle of ANOVA, ANOVA technique, Analysis of Co variance (ANACOVA). Sampling: Definition, Types- simple, random, stratified, cluster and double sampling. Need for sampling - Criteria for good samples, Application of sampling in community, Procedures of sampling and sampling designs errors.	
# Mode: Flipped Class Room, Case Discussion, Lectures.	
Reference Books :-	
1. Bailey, N.T.J. -Statistical methods in Biology. The English universities press, London	
2. Bajpai, S.R.- Methods of Social Survey and Research, Kitab Ghar, Kanpur.	
3. Colton - Statistics in medicine, Little Brown Company, Boston	
4. Gupta, S.P -Statistical methods. Sultan Chand and Sons Publishers, New Delhi	
Text Books :-	
1. Goulden C.H.- Methods of Statistical Analysis. Asia Publishing House, New Delhi.	
2. Mohsin S.M.- Research Methods in Behavioral Sciences: Orient Publications. New Delhi.	
3. Mahajan - Methods in Biostatistics, Jay Pee Brothers. Medical Publishers (P) Ltd. N. Delhi.	
4. Hicks- Research for Physiotherapists, Churchill Livingstone, London.	